

NWS Decision Support Services to TRACON

*Lessons Learned from an On-Site
Support Demonstration in New York
and Leveraging Science to Help your
Partner*

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WFO, CWSU and TRACON



Review of the December demonstration at N90

- Dec 13-17 (6 AM - 2 PM)
- Dec 20-23 (6 AM - 9 PM)
- Equipment:
 - PC
 - Phone
- “Room” on the Ops Floor

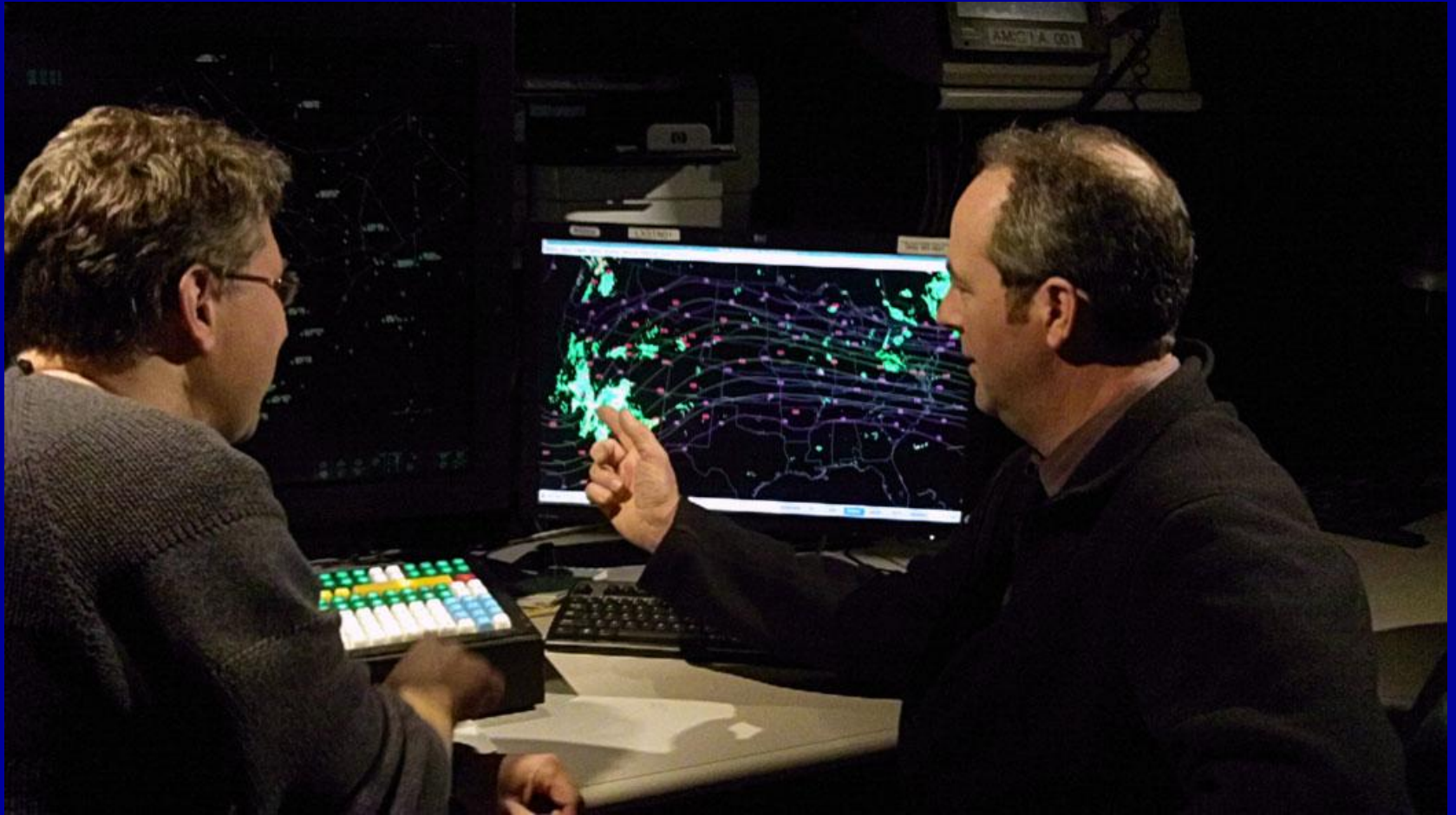
N90 Morning Spin Up

- 6:15 – 6:45 AM Local
- 7:00 AM Stand Up
- 7:10 AM Center Weather Brief
- 7:15 AM Strategic Planning Telcon



What Did We Do ??

- Briefed the Weather at stand up's
- Briefed the STMC 5-10 minutes prior to SPT's
- Briefed the TMC's of unexpected weather
- Coordinated concerns/impacts back to the WFO forecaster.
- Coordinated changes to TAF's with the TMU.

What Did We Do ??



They use our SPA



NY TRACON Weather Strategic Planning Aid (SPA)

Version 1.06 - Feb 17, 2011

Prepared: 335 PM EST WED FEB 23 2011

For ATC Planning Purposes Only - See AviationWeather.gov if data is not current

NY Terminal Aviation Weather Discussion (AFD)

A RIDGE OF HIGH PRESSURE EXTENDING SOUTH ACROSS NY STATE WILL MOVE SOUTHEAST OFF THE MID ATLANTIC COAST ON THURSDAY. LOW PRESSURE OVER THE SOUTH CENTRAL U.S. WILL INTENSIFY AS IT MOVES NORTHEAST ACROSS THE AREA ON FRIDAY.

THROUGH TONIGHT...UNDER CLEAR SKIES...LIGHT N-NW WINDS FROM 330-350 DEGS AT LESS THAN 10 KT WILL BECOME LIGHT AND VARIABLE BY SUNSET.

THURSDAY...LIGHT S-SE WINDS FROM 150-180 DEGS DEVELOPS BETWEEN 14Z AND 16Z AND INCREASES TO AROUND 10 KT BY 18Z. BKN CIRRUS CLOUDS LOWER TO BKN ALTO STRATUS CLOUDS.

NY Metro Terminal Aviation Weather Summary: [\(Explanation of Color Coding\)](#)
*NOTE: All Wind Directions are **TRUE** (add 13 degrees for magnetic directions). Tail and Crosswind Calculations do account for the magnetic deviation of runways.*

Click on the Airport Below for Specific Information at that Terminal

SITE	CIG		VIS		Wx		WindS		WindG		RnWy	
	21z	0z	21z	0z	21z	0z	21z	0z	21z	0z	21z	0z
KJFK												
KLGA												
KEWR												
KTEB												
KHPN												
KISP												

FYI: [NEW Condensed "lite" version of SPA page](#) ^{NEW}

KJFK Terminal Weather:

5MIN KJFK 232140Z 33007KT 10SM CLR 06/M17 A3029 -320 18
-1500 340/07 RMK A02

5MIN KJFK 232135Z 33007KT 10SM CLR 06/M17 A3029 -320 18
-1500 340/07 RMK A02

SAUS70 KJFK 232100

METAR KJFK 232051Z 34006G15KT 10SM CLR 06/M19 A3029 RMK A02 SLP256
T00561194 56007

What's Special about the **NY TRACON** **Strategic Planning Aid (SPA)**

- They Helped Design It !!
 - Five Min ASOS
 - Terminal Information Board
 - Comments Associated with the TAF
 - Prints Correctly (One Airport Per Page)

No Alerts To New Forecasts

- 6:30 AM Spin Up Time
 - May use the 09Z TAF
 - Summer Time will definitely use the 09Z TAFs

Weather Element of Concern?

PLAN-X		
AW	040	07
04LA	050	08
04LD	050	06
04RA	030	08
04RD	060	06
09RA	050	08
09RD	060	04
10 A	030	09
10 D	060	06
14LA	060	07
14LD	060	04
32RA	060	04
32RD	060	07
14RA	040	08
14RD	040	06
32LA	040	06
32LD	040	08
09LA	070	08
09LD	060	07
ORD:RDAlerts Valid Until: 02/24/2011 15:33:45 GMT		

Put Yourself in your Customer's Position

Airport Arrival Demand Chart

Width 350

X

Height 600

Resize

Version 2.1

Double click to select an airport and color-scheme!

☒ 15 ☐ 30 ☐ 60

NEW
ORD
PBI

☒ 15 ☐ 30 ☐ 60

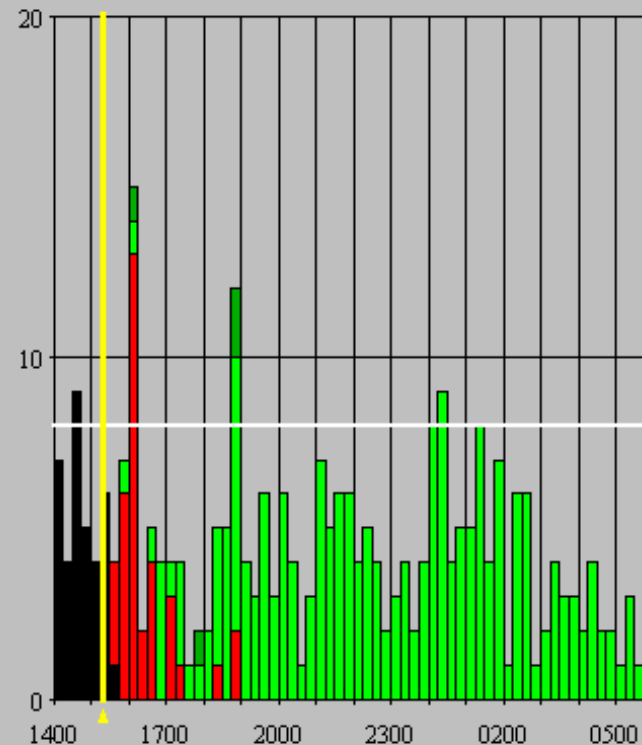
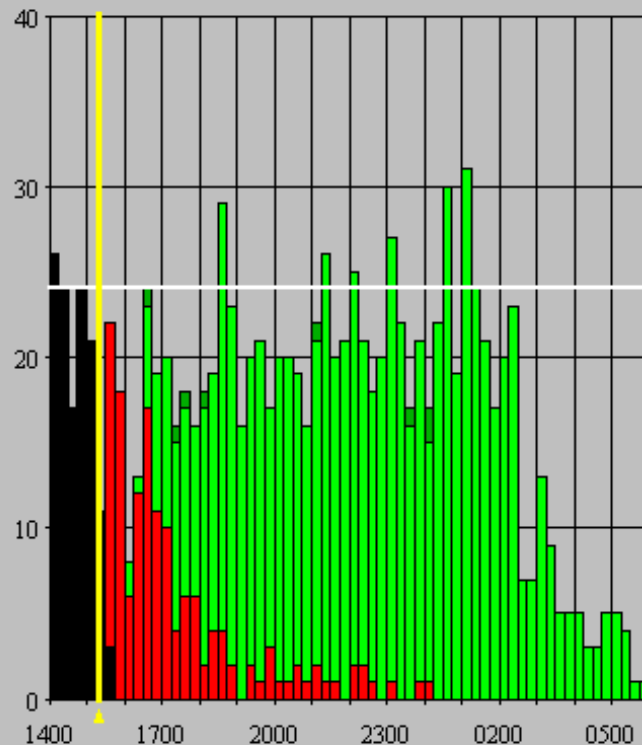
MCO
MDW
MEM

ORD 02/24/2011 15Cancelled Flights: 14

No GDP

MDW 02/24/2011 15Cancelled Flights: 12

No GDP



Know Your Customers

- 19 People in the N90 TMU
 - OM's Answer the Phone too.
 - Not Sure if the Information is getting through
- Use the ATCSCC Weather Unit
 - 5 People (Buddy, Rick, Laurie, Dan and Kevin)
 - Call them when there's a change
 - 30 Minutes Prior to the SPT is a Key Time

Realized by the N90 Operation

- Improved awareness of:
 - meteorological situation and current weather conditions.
 - forecasted changes in weather conditions.
- New ability to assimilate uncertainty in forecasts for integration into decision making.
- More effective integration of weather forecasts in Traffic Management.
- Increased ability to effectively manage Air Traffic.

Realized by the NWS Meteorologist

- keenly more aware of:
 - critical weather “problem of day” threshold levels
 - decision making processes at N90
 - the weather tools available to N90
- cognizant of specific daily TMU weather information needs.
- awareness of current FAA air traffic impacts and concerns was greatly increased.

Realized by the NWS Meteorologist

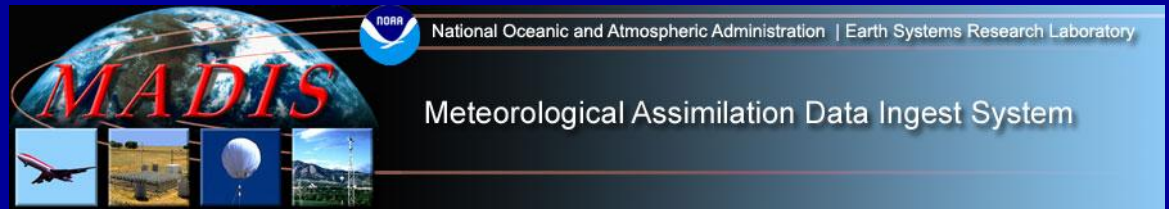
- Less time and effort to obtain awareness of current FAA air traffic impacts and concerns compared to doing such at the WFO.
- The communication of “unwritten” meteorological uncertainty and unanticipated forecast changes was easily accomplished and more effective.
- The “value and credibility” of NWS information was improved, accepted and integrated enthusiastically into N90 operations
- A high degree of job satisfaction.

The Future...



Leveraging Science to Help your Partner

MADIS



BUFKIT 10



Focusing on Winds...

5 Minute ASOS

Text 1: MTTJFK

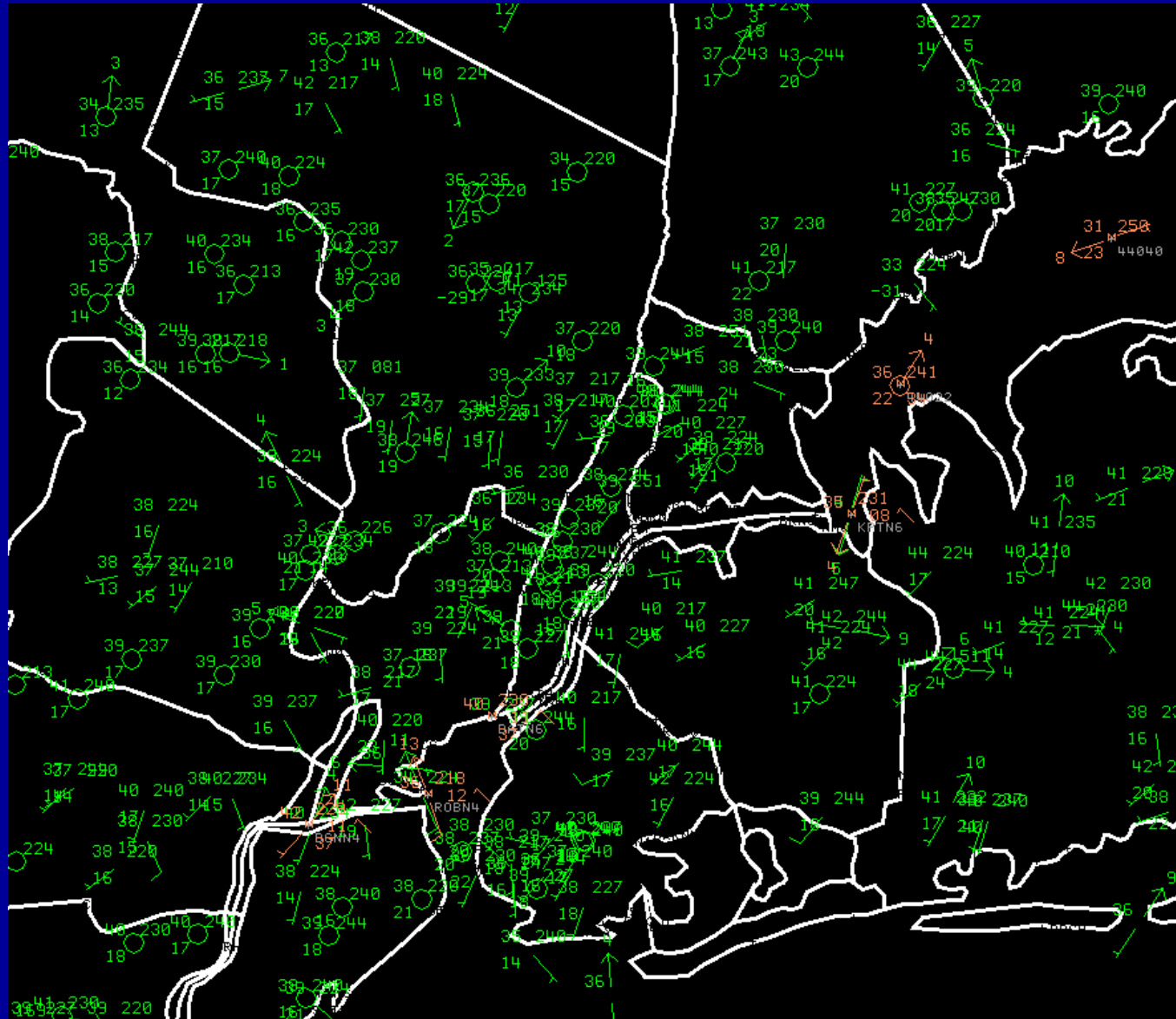
Menu Edit Options Version Tools Scripts Products Help

AFOS Browser Load History WMO Search Enter Editor ☐ Accum ☐ Update Obs Clear

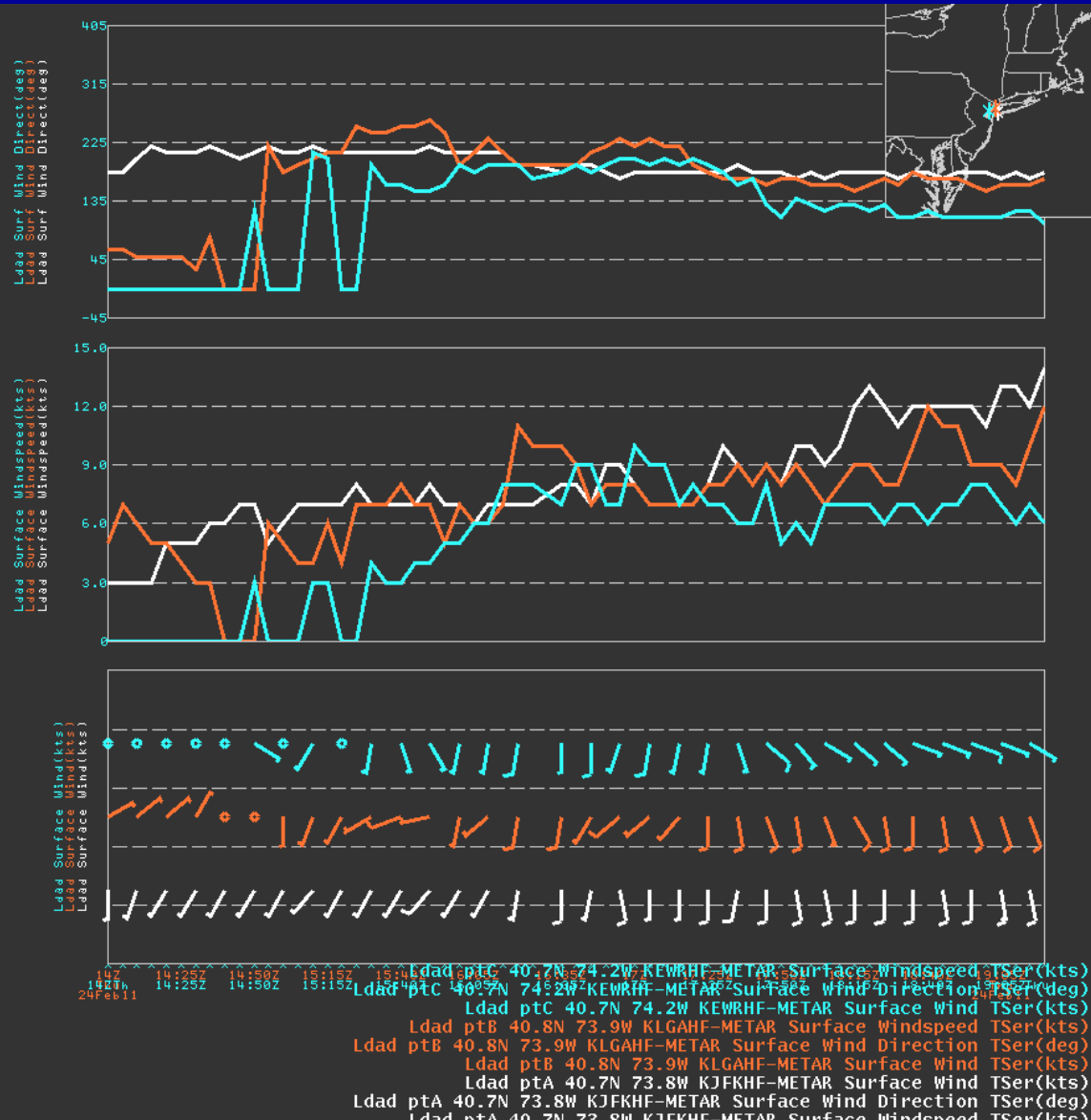
AFOS Cmd: WMO TTAai CCCC: AWIPS ID:

```
5MIN KLGA 242050Z 19013KT 10SM FEW095 BKN250 04/M01
A3009 -130 70 -1400 200/13 RMK AO2 SLP190 T00441006 58027
5MIN KLGA 242045Z 18012KT 10SM CLR 04/M01 A3009 -130 70
-1400 190/12 RMK AO2 SLP190 T00441006 58027
5MIN KEWR 242050Z 14006KT 10SM FEW060 SCT090 BKN130
BKN250 08/M02 A3008 -120 51 -900 150/06 RMK AO2 SLP186 HAZE ALOFT T00781017
58029
5MIN KEWR 242045Z 14006KT 10SM CLR 08/M02 A3008 -120 51
-900 160/06 RMK AO2 SLP186 T00781017 58029
5MIN KJFK 242050Z 18016KT 10SM CLR SCT130 BKN250 04/M01
A3011 -150 67 -1400 190/16 RMK AO2 SLP195 T00441011 58026
5MIN KJFK 242045Z 18017KT 10SM FEW100 04/M01 A3011 -160
67 -1400 200/17 RMK AO2 SLP196 T00441011 58026
```

MADIS in AWIPS

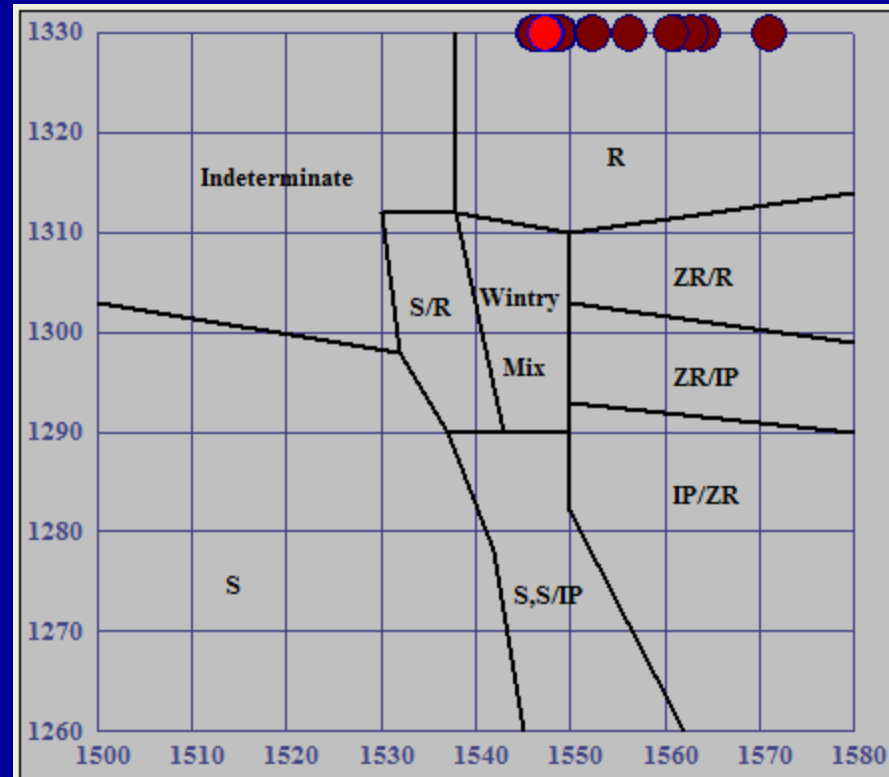


MADIS Time Series



New BUFKIT 10 Features

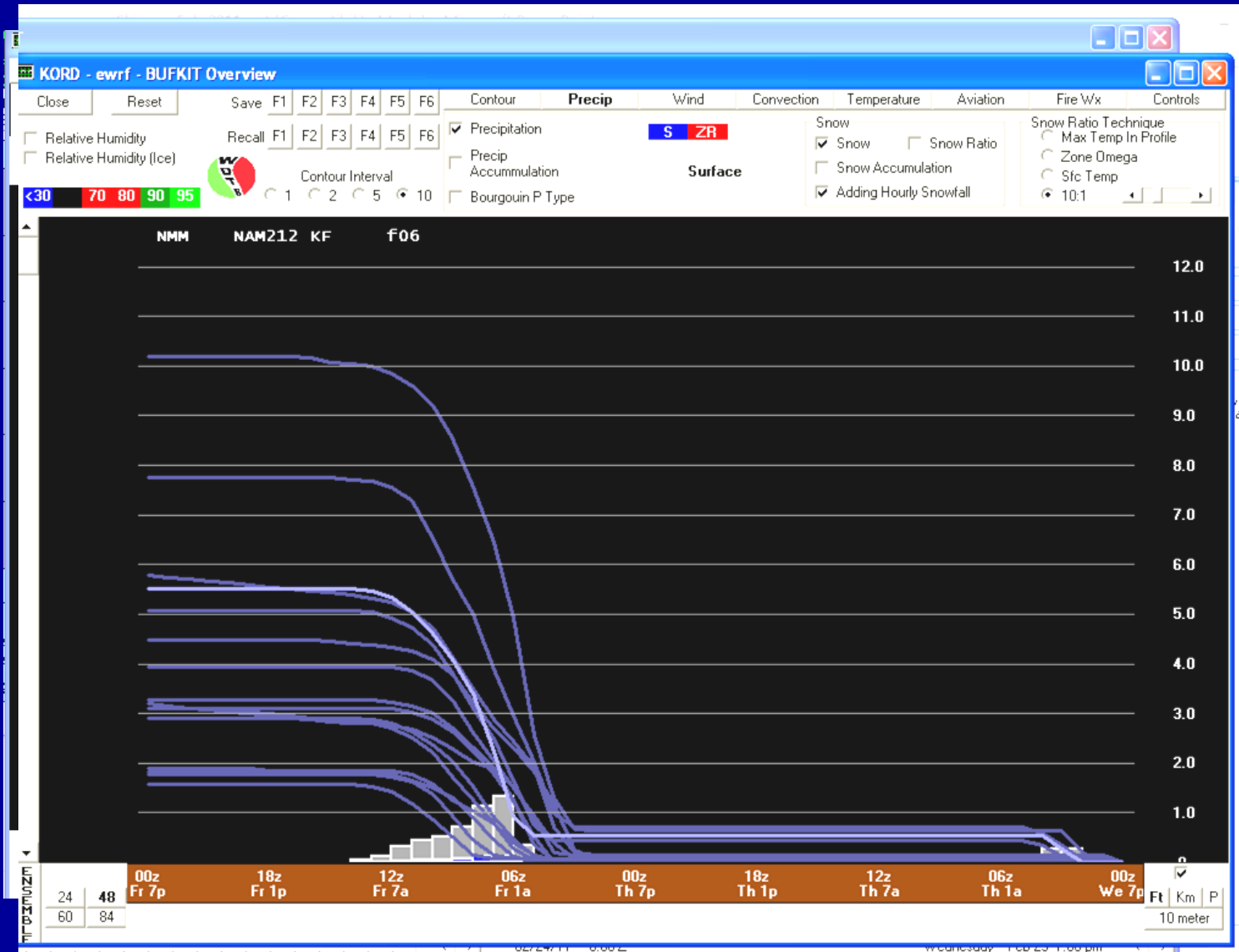
- SREF
 - WRF
- Ensemble



New Features

- **Plume diagrams.**
- **Snow accumulation.**
- **Keyboard shortcuts.**
- **CAPE-Shear diagrams.**

Plumes





Close Reset Save F1 F2 F3 F4 F5 F6

Contour **Precip** Wind Convection Temperature Aviation Fire Wx Controls

☐ Relative Humidity
☐ Relative Humidity (Ice)

Recall F1 F2 F3 F4 F5 F6



Contour Interval

☐ 1 ☐ 2 ☐ 5 ☒ 10

☒ Precipitation
☐ Precip Accumulation
☐ Bourguoin P Type

S ZR

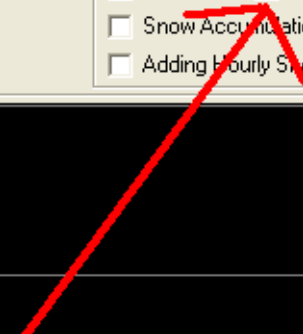
Surface

Snow

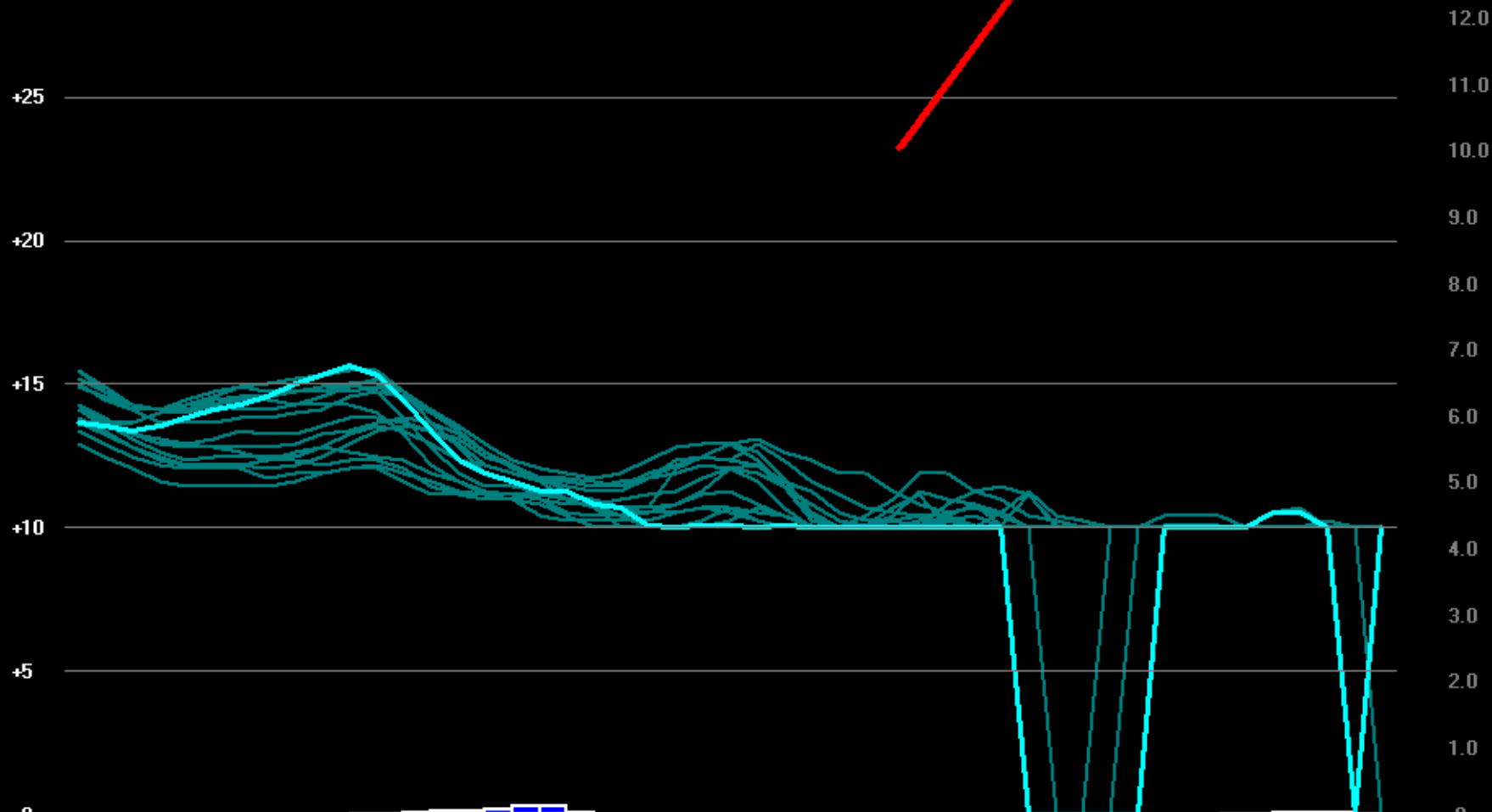
☐ Snow ☒ Snow Ratio
☐ Snow Accumulation
☐ Adding Hourly Snowfall

Snow Ratio Technique

☒ Max Temp In Profile
☐ Zone Omega
☐ Sfc Temp
☐ 10:1



NMM NAM212 KF f06



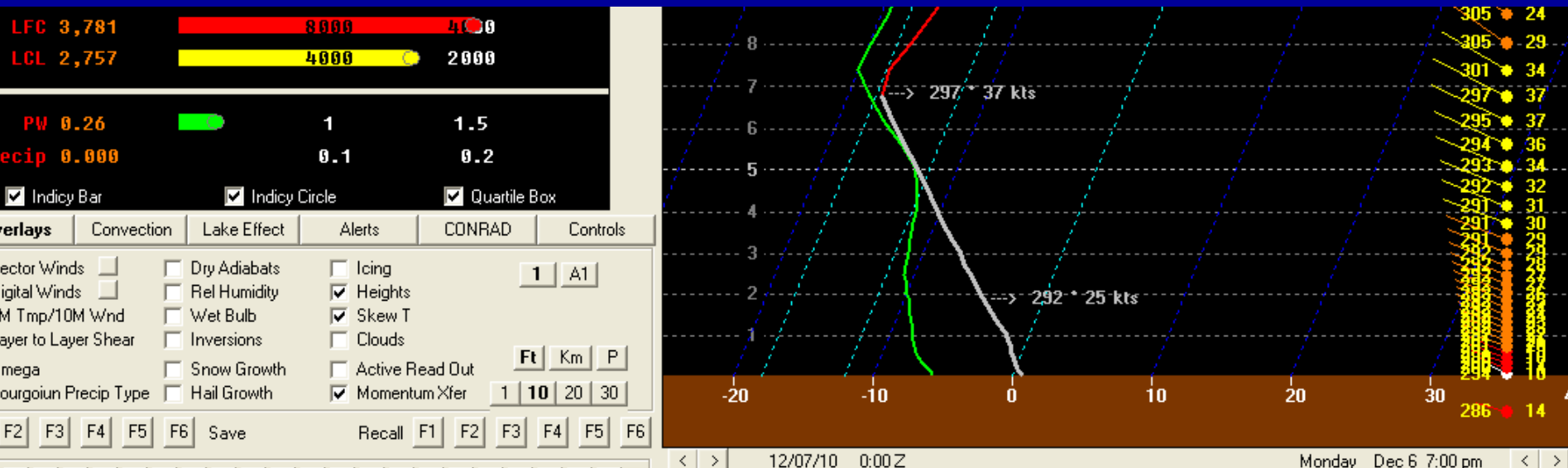
24 48
60 84

00z Fr 7p 18z Fr 1p 12z Fr 7a 06z Fr 1a 00z Th 7p 18z Th 1p 12z Th 7a 06z Th 1a 00z We 7p

☐ Ft Km P
10 meter

Winds

1. How do you turn on Momentum Transfer?
2. What does the number next to Momentum Transfer Mean?
3. What is the lower momentum transfer number?
4. What is the upper momentum transfer number?



Close

Reset

Save

F1

F2

F3

F4

F5

F6

Contour

Precip

Wind

Convection

Temperature

Aviation

Fire Wx

Controls

☐ Relative Humidity☐ Relative Humidity (Ice)

Recall

F1

F2

F3

F4

F5

F6



Contour Interval

☐ 1☐ 2☒ 5☐ 10☐ Davis Stability Index☐ Haines ROS Index

Momentum Transfer

1

10

20

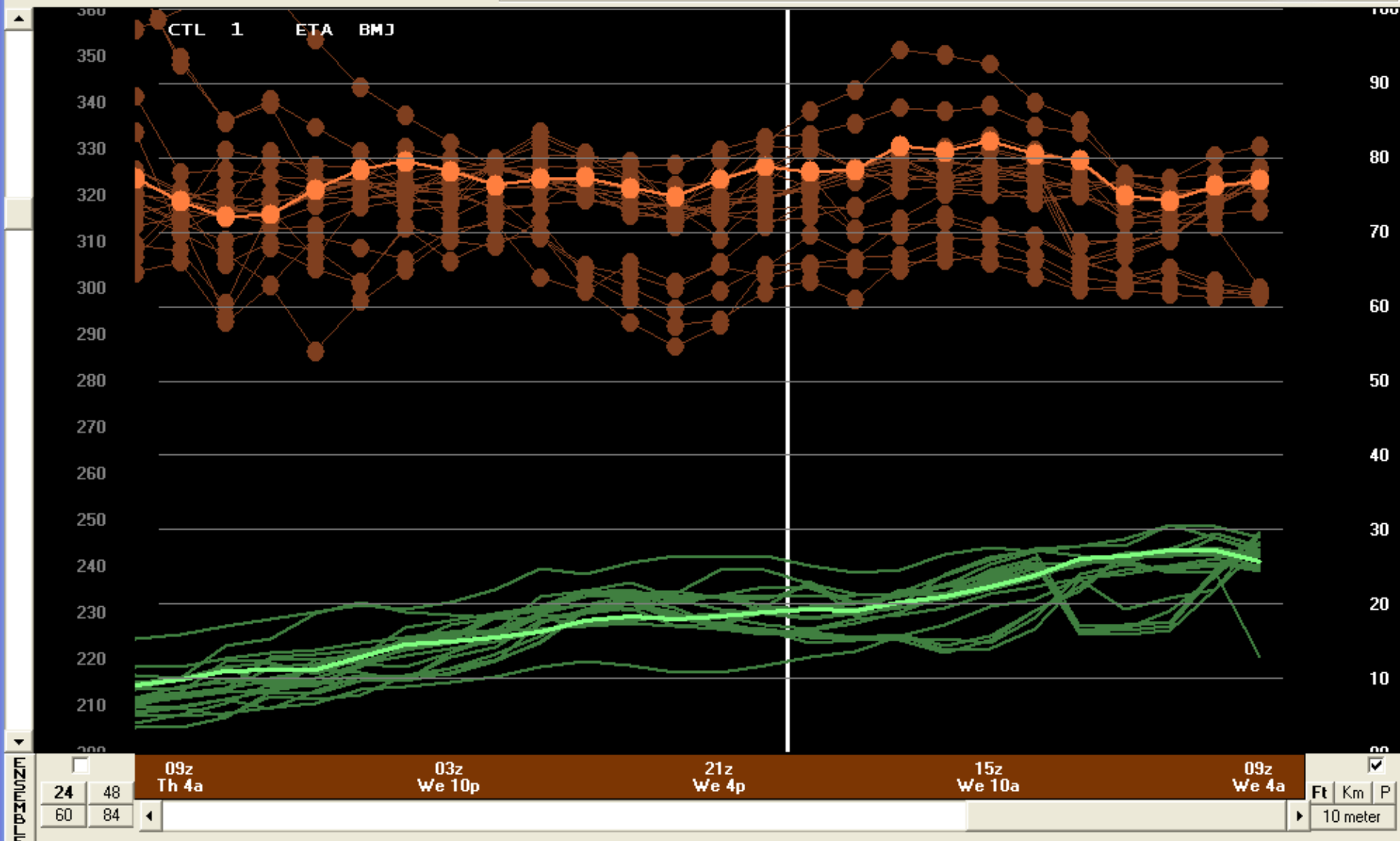
30

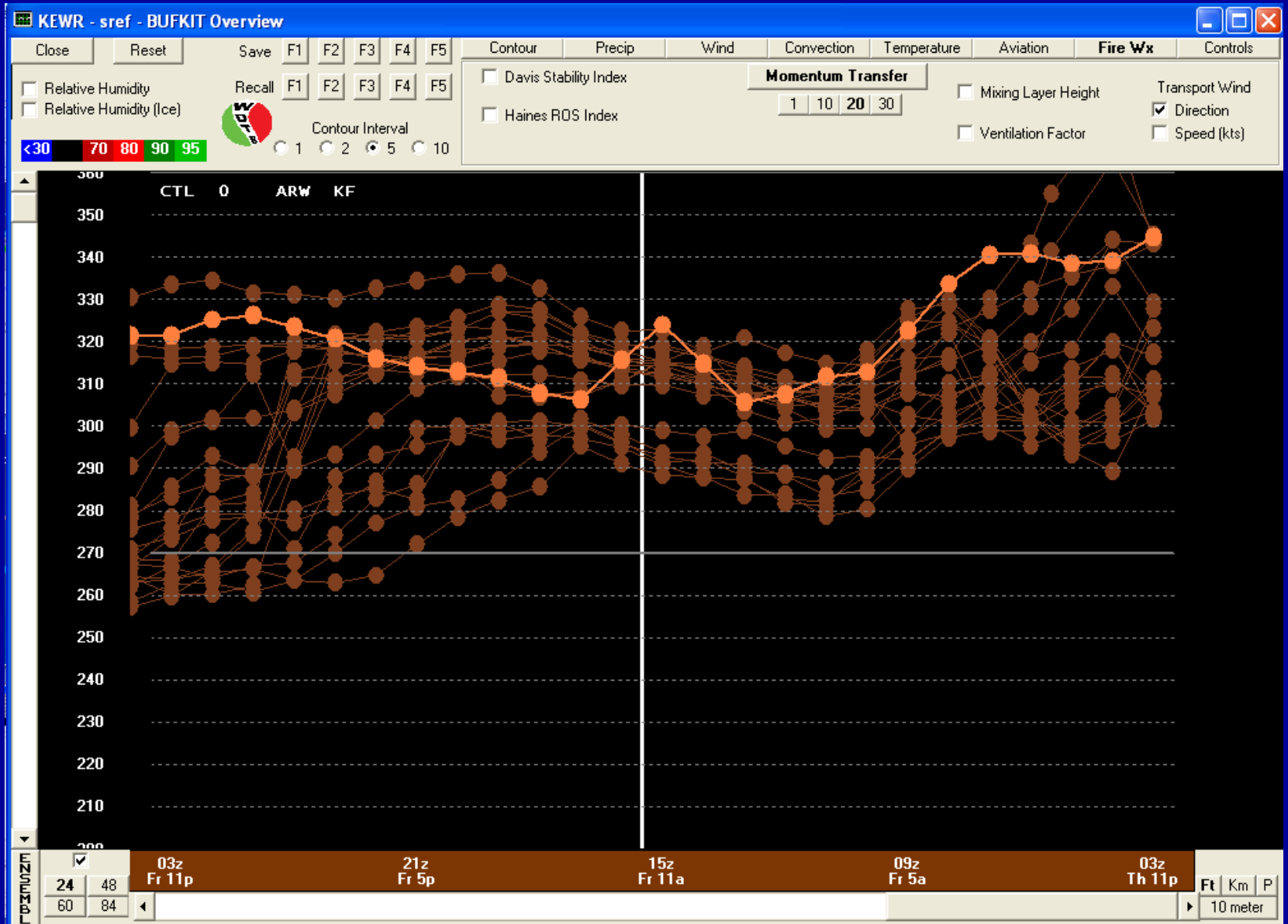
☐ Mixing Layer Height☐ Ventilation Factor

Transport Wind

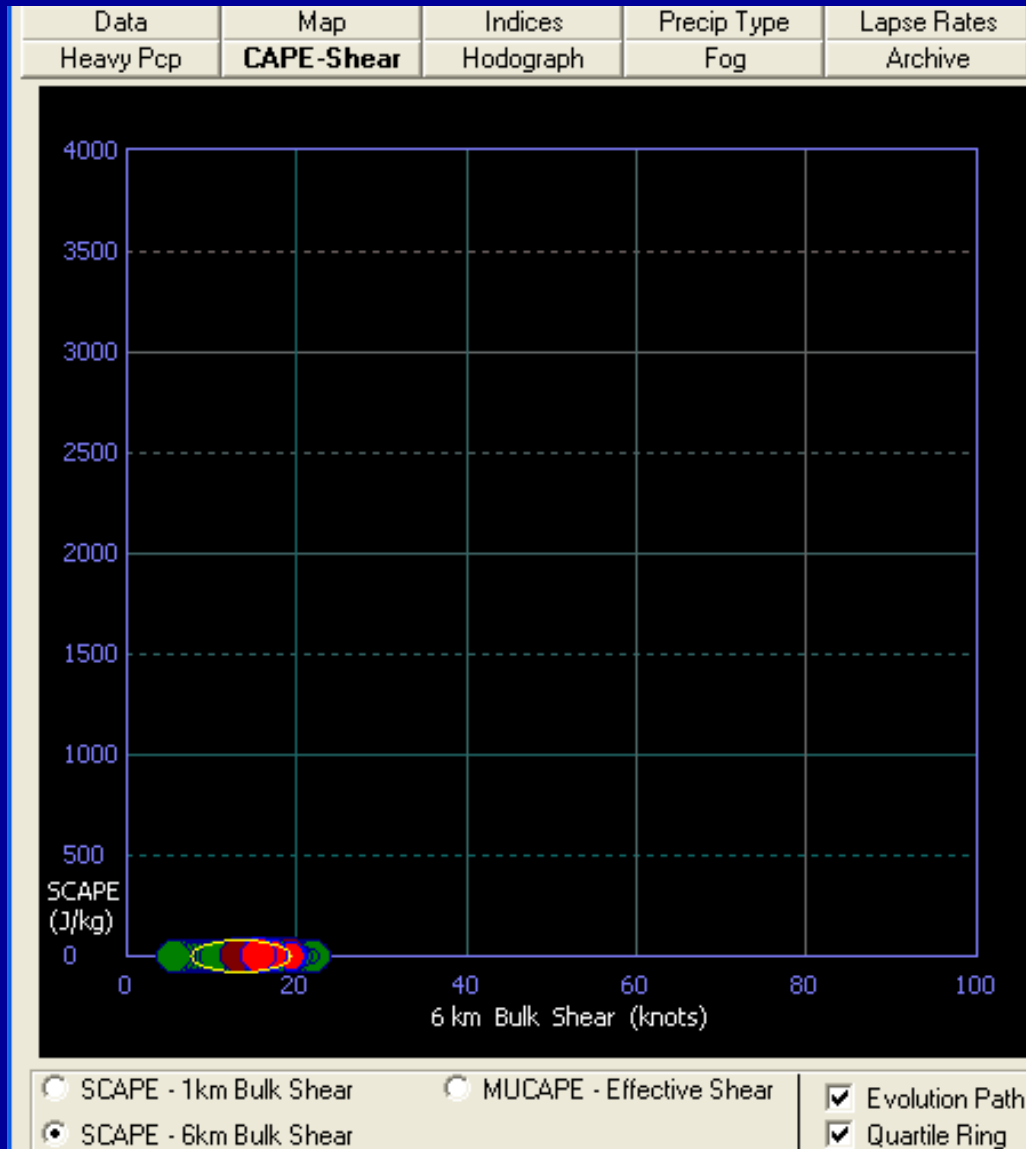
☒ Direction☒ Speed (kts)

<30 70 80 90 95





CAPE - Shear

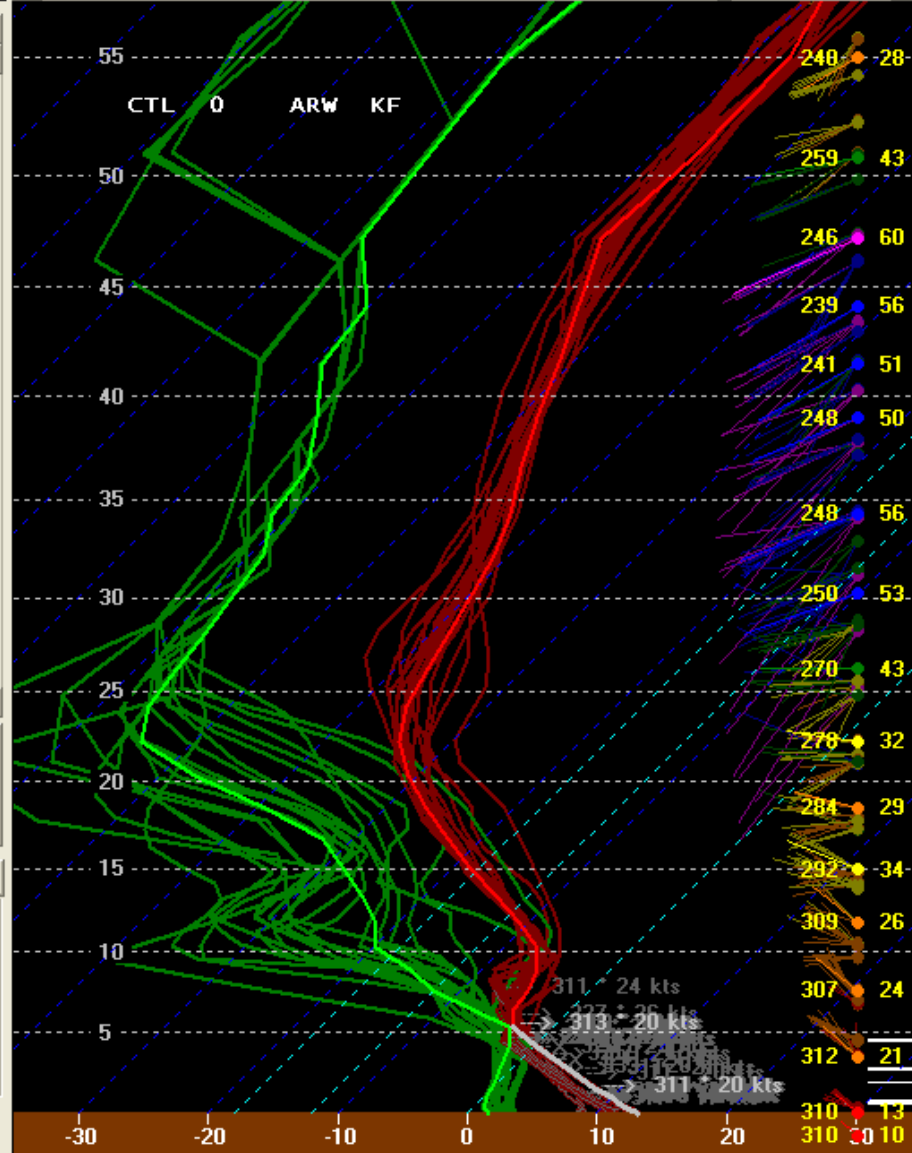


Using the Map

- Change Stations by Clicking on the MAP !!

Get Data	Set Up		OverView
Loop	Training		

◀ ▶

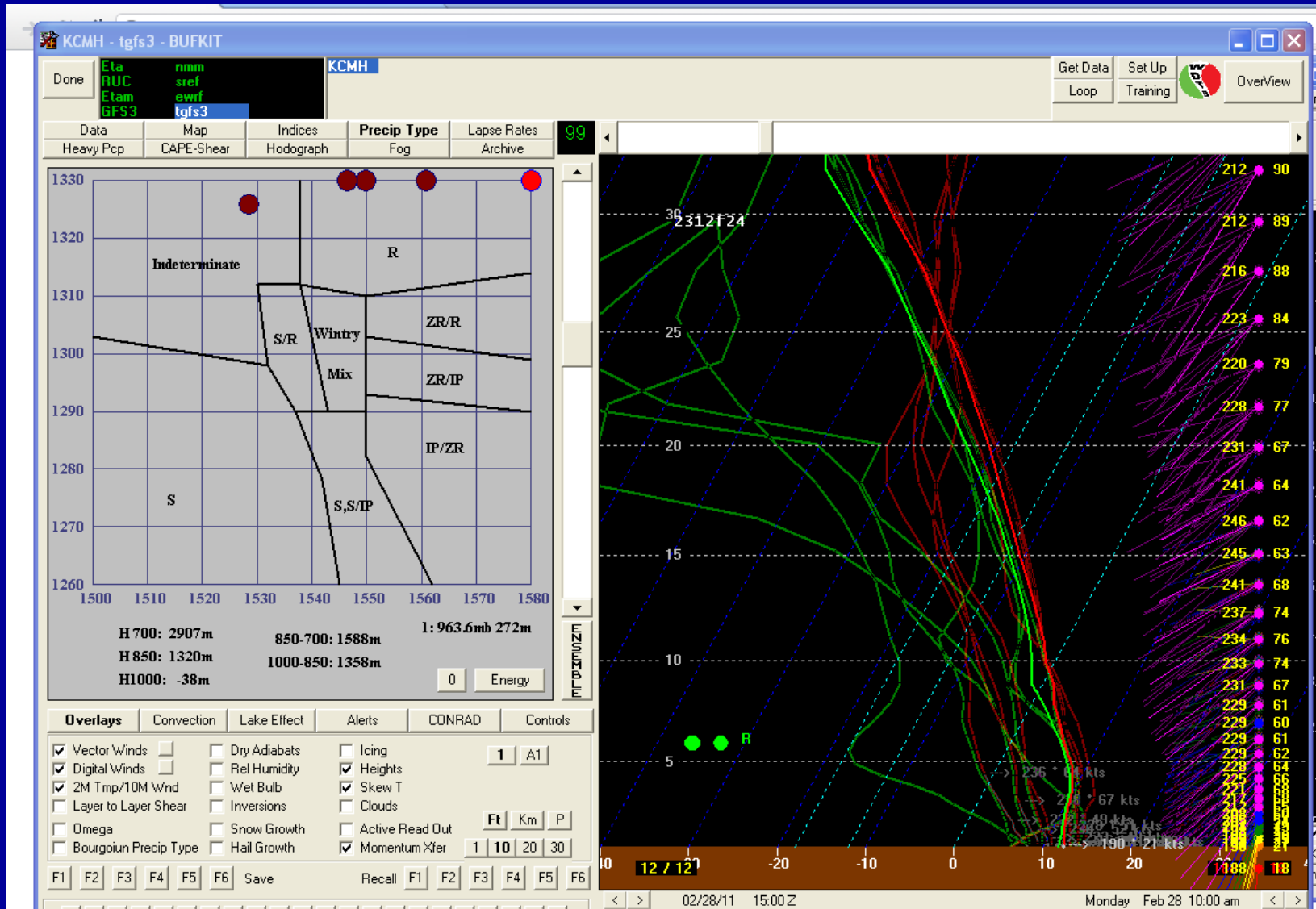


< > 10/29/10 19:00Z Friday Oct 29 3:00 pm < >

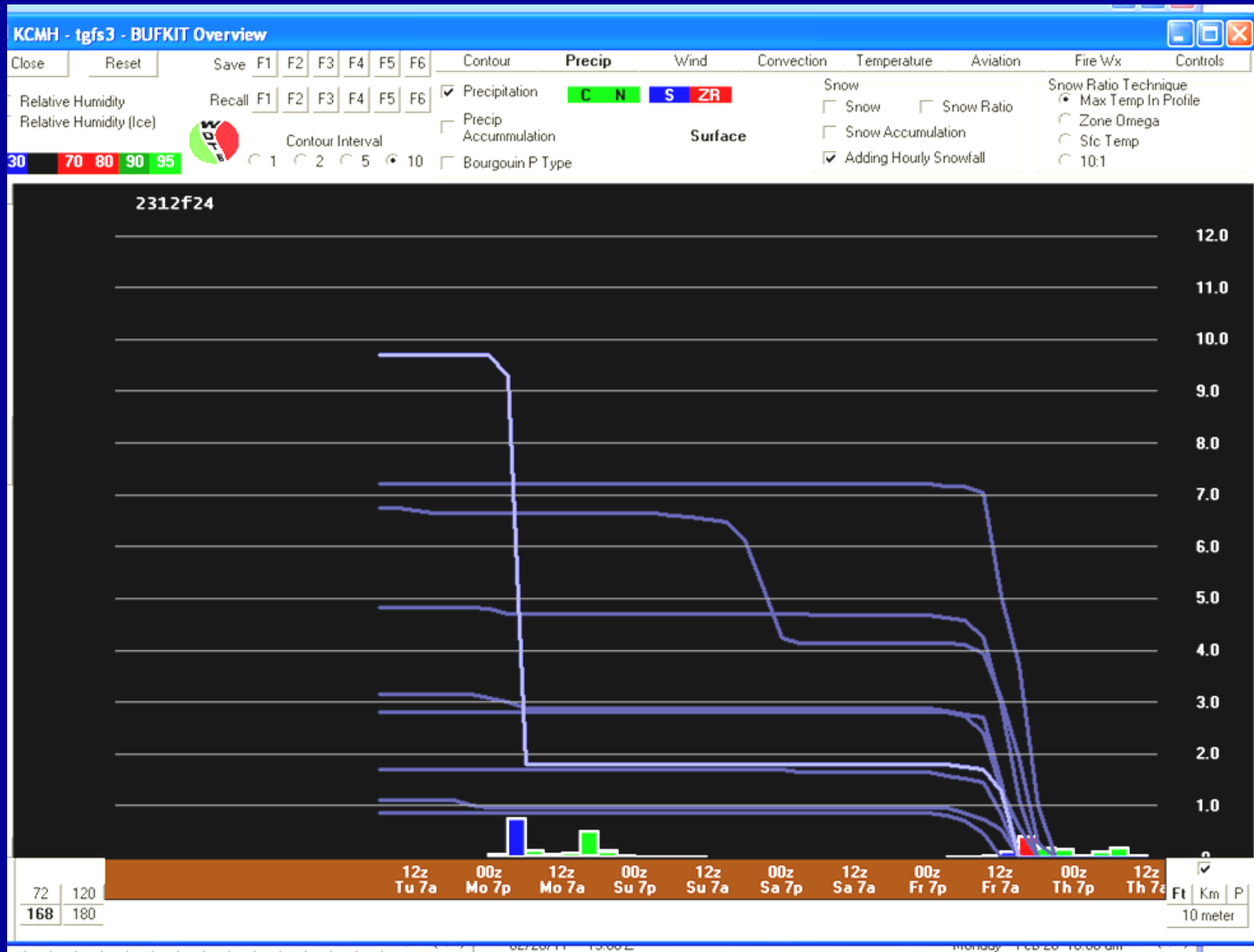
BUFKIT 10

- SREF (21 Members)
- WDTB WRF Ensemble (16 Members)
 - **Resolution:** 24 KM
 - **Frequency:** 00Z and 12Z
 - **Members:** 8 ensemble members (2^3) x 2 Initializations
 - NMM/ARW
 - NAM/GFS
 - KF/BMJ
- Time Lagged GFS
 - (Compositing the Last 9 Runs of the GFS)

Time Lagged GFS



Time Lagged GFS



Conclusions

- On-Site NWS Decision Support at NY TRACON has great potential
- Mature / Grow your “partnership”
- Keep their perspective in mind. Know your customer.
- Exploit the latest Science

Developing new tools through Technology

